

5.4/1

1 a) position is increasing

 $v(t) = s'(t)$  is positive $a(t) = s''(t)$  is neg.particle slowing down

$$v(t) > 0$$

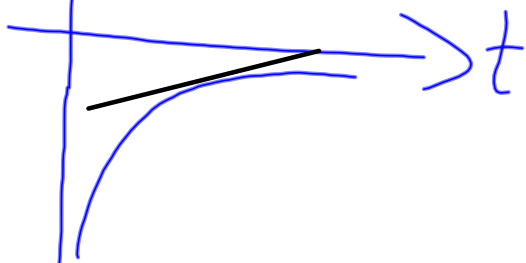
$$a(t) > 0$$

speeding  
up ↑

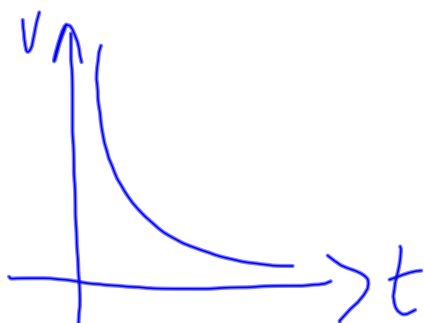
$$c) \quad v(t) < 0$$

$$a(t) > 0$$

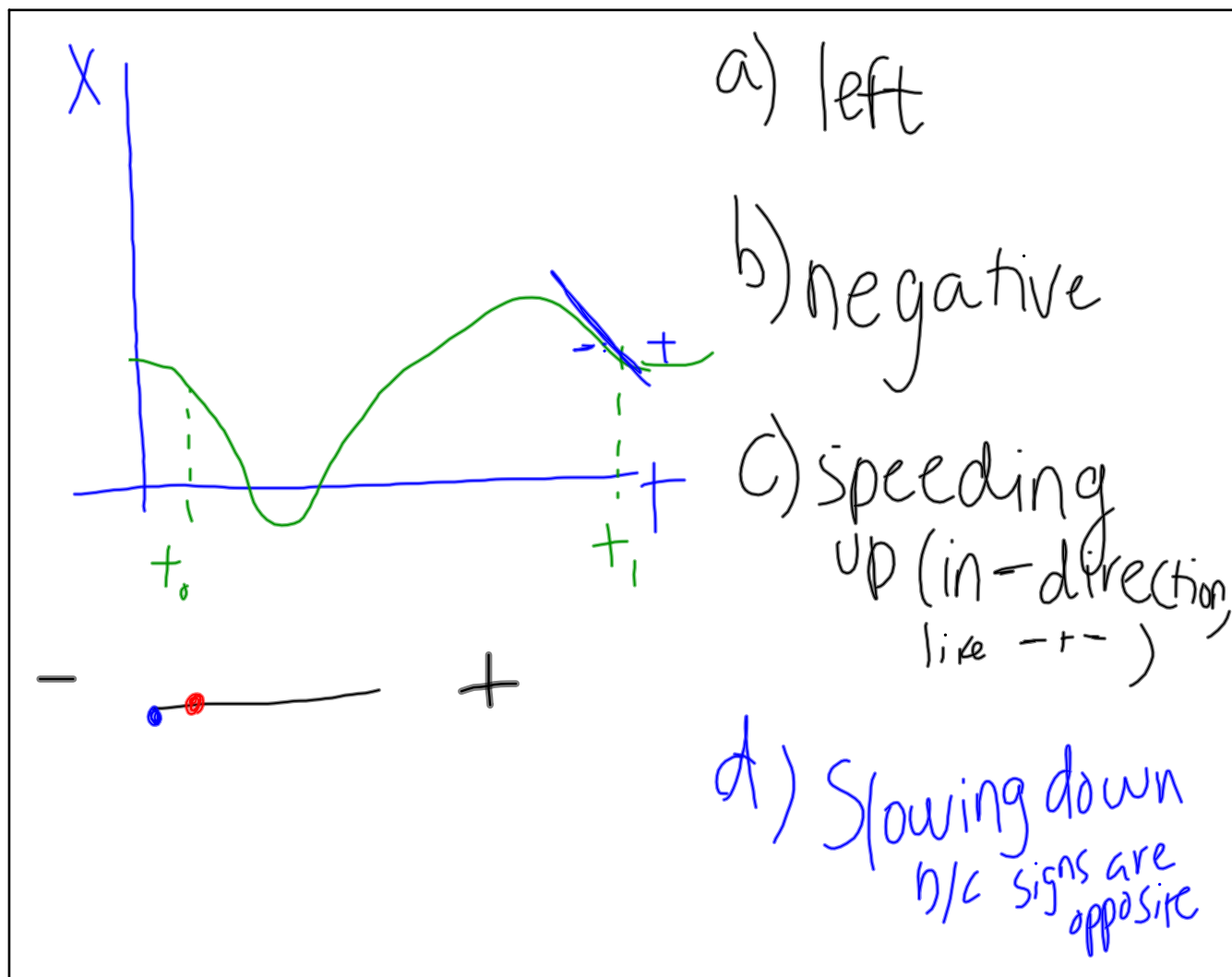
slowing  
down

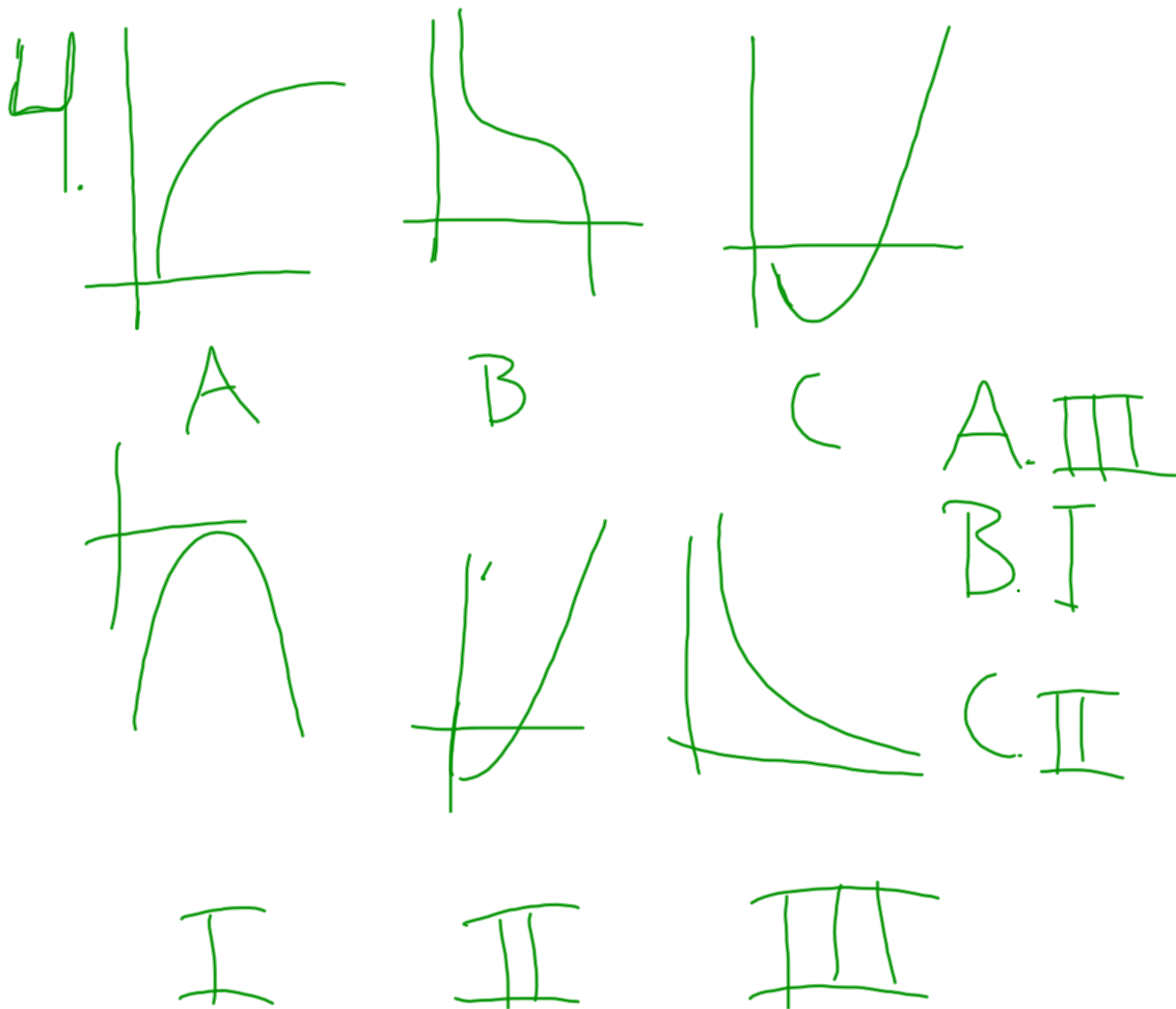
a)  $v$ 
 $v = +$   $a = -$   
 slowing down

b)

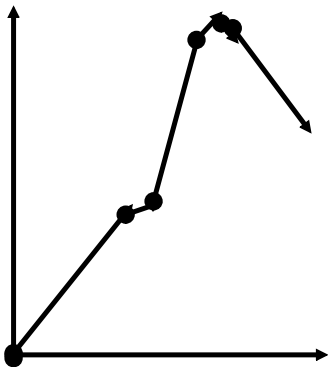

 $v = -$   $a = +$   
 slowing down

 $v = +$   $a = +$   
 speeding up





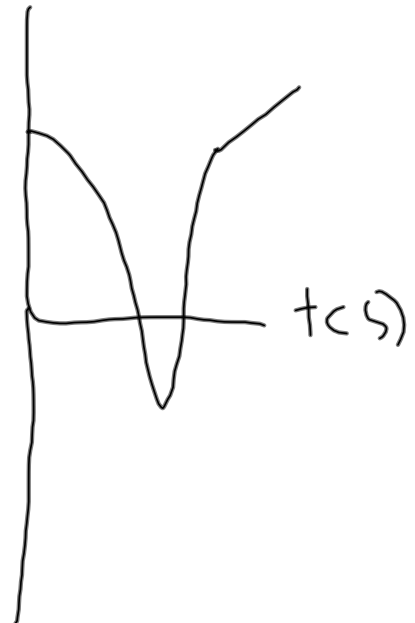
5



6.

a.  $[0, 2), (4, 7]$  s

b. 3 seconds

c.  $[0, 3]$ 

$$s(t) = t^3 - 4t + 2$$

a) find velocity and acceleration functions

b) find position, velocity, and acceleration at  $t = 1$

c) when is the particle stopped?

d) when is the particle speeding up?  
slowing down?

e) what is the total distance traveled between 0 and 5 seconds?